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A QCD analysis of the Proton Structure Function $F_2(x, Q^2)$

H1 Collaboration

Abstract

A QCD analysis of the measurements of the proton structure function $F_2(x, Q^2)$ together with results from fixed target experiments is presented. The NLO DGLAP evolution equations supplemented by a higher twist motivated ansatz are used. The functional representation of the parton distributions are studied. The gluon density is extracted starting from a low energy scale. The dependence of the analysis on the strong coupling constant α_S is studied in detail.

Plenary Sessions:
2. Soft Interactions and Diffraction Phenomena - S. Levonian
4. QCD and Low x Physics - H. Abramowicz, R. Brock
5. AlphaS Determination and Implications - M. Schmelling, G. Sterman
Parallel Session: I Strong Interaction Physics
2. Soft Interactions
3. Structure Functions and Low x Physics
4. Hard Processes and Perturbative QCD